Remarks

This Amendment is being made in response to the Notice to Comply dated March 26, 2007. Applicants respectfully submit that no new matter has been introduced.

The Commissioner is hereby authorized to charge any fees which may be required to Deposit Account No. 19-0065.

Respectfully submitted,

Doran R. Pace Patent Attorney

Registration No. 38,261

Phone No.: 352-375-8100

Fax No.:

352-372-5800

Address:

P.O. Box 142950

Gainesville, FL 32614-2950

DRP/kmm

Attachment: copy of Notice to Comply dated March 26, 2007



UNITED STATES PATENT AND TRADEMARK OFFICE



UNITED STATES DEPARTMENT OF COMMERCE United States Patent and Trademark Office Address: COMMISSIONER FOR PATENTS P.O. Box 1450 Alexandria, Virginia 22313-1450 www.usplo.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/080,772	02/22/2002	NECEIVEN	UF-267XC1	1105
23557 S A L IW A NCH	7590 03/26/200 IK LLOYD & SALIW	7	EXAM	INER
A PROFESSIO	NAL ASSOCIATION		PARKIN, I	EFFREY S
PO BOX 1429:	50 E, FL 32614-2950		ART UNIT	PAPER NUMBER
	2, 12 02 01 11 21 01	<u> </u>	1648	
SHORTENED STATUTOR	RY PERIOD OF RESPONSE	MAIL DATE	DELIVER	Y MODE
3 MC	ONTHS	03/26/2007	PA	PER

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Notice to Comply

Application No. 10/080,772 Examiner Jeffrey S. Parkin

Yamamoto, J. K., et al. Art Unit 1648

Applicant(s)

Paper No. 03/19/2007

NOTICE TO COMPLY WITH REQUIREMENTS FOR PATENT APPLICATIONS CONTAINING NUCLEOTIDE SEQUENCE AND/OR AMINO ACID SEQUENCE DISCLOSURES

Applicant must file the items indicated below within the time period set the Office action to which the Notice is attached to avoid abandonment under 35 U.S.C. § 133 (extensions of time may be obtained under the provisions of 37 CFR 1.136(a)).

The nucleotide and/or amino acid sequence disclosure contained in this application does not comply with the requirements for such a disclosure as set forth in 37 C.F.R. 1.821 - 1.825 for the following reason(s):

- ☑ 1. This application clearly fails to comply with the requirements of 37 C.F.R. 1.821-1.825. Applicant's attention is directed to the final rulemaking notice published at 55 FR 18230 (May 1, 1990), and 1114 OG 29 (May 15, 1990). If the effective filing date is on or after July 1, 1998, see the final rulemaking notice published at 63 FR 29620 (June 1, 1998) and 1211 OG 82 (June 23, 1998). 2. This application does not contain, as a separate part of the disclosure on paper copy, a "Sequence Listing" as required by 37 C.F.R. 1.821(c). 3. A copy of the "Sequence Listing" in computer readable form has not been submitted as required by 37 C.F.R. 1.821(e). 4. A copy of the "Sequence Listing" in computer readable form has been submitted. However, the content of the computer-readable-form-does-not-comply-with-the-requirements-of-37 C.F.R.-1.822-and/or-1.823, as-indicated-on-theattached copy of the marked -up "Raw Sequence Listing." 5. The computer readable form that has been filed with this application has been found to be damaged and/or unreadable as indicated on the attached CRF Diskette Problem Report. A Substitute computer readable form must
 - be submitted as required by 37 C.F.R. 1.825(d). ☐ 6. The paper copy of the "Sequence Listing" is not the same as the computer readable from of the "Sequence Listing" as required by 37 C.F.R. 1.821(e).
 - 7. Other: applicants are reminded that Sequences appearing in the specification and/or drawings (e.g., see Figures 2, 4, and 10) must be identified by a sequence identifier (SEQ ID NO.:) in accordance with 37 C.F.R. § 1.821(d). Sequence identifiers for sequences appearing in the drawings may appear in the Brief Description of the Drawings. Applicant must provide appropriate amendments to the specification and/or drawings inserting the required sequence identifiers. Extensive amendments may necessitate the submission of a substitute specification. If the requisite SEQ ID NOS.: are not present in the sequence listing, a substitute sequence listing will be required.

Applicant May Need to Provide:

- An substitute computer readable form (CRF) copy of the "Sequence Listing".
- An substitute paper copy of the "Sequence Listing", as well as an amendment directing its entry into the specification.
- A statement that the content of the paper and computer readable copies are the same and, where applicable, include no new matter, as required by 37 C.F.R. 1.821(e) or 1.821(f) or 1.821(g) or 1.825(b) or 1.825(d).

For questions regarding compliance to these requirements, please contact:

- For Rules Interpretation, call (571) 272-0951
- For Patentin Software Program Help, call Patent EBC at 1-866-217-9197 between the hours of 6 a.m. and 12 midnight, Monday through Friday, EST.
- Send e-mail correspondence for Patentin Software Program Help @ ebc@uspto.gov.

To Download Patentin Software, visit http://www.uspto.gov/web/patents/software.htm.

PLEASE RETURN A COPY OF THIS NOTICE WITH YOUR REPLY



Director of the United States Patent and Trademark Office P.O. Box 1450 Alexandria, Virginia 22313-1450

03/19/2007

ART UNIT

1648

SERIAL NUME	BER FILING DATE		
SERIAL NOIVI		FIRST NAMED APPLICANT	ATTORNEY DOCKET NO.
10/080,772		Yamamoto, J. K., et al.	UF-267XC1
		EXAMINER Jeffrey S. Parkin, Ph.	D. PAPER NUMBER

DATE MAILED:

Please find below a communication from the EXAMINER in charge of this application Commissioner of Patents

This application contains sequence disclosures that are encompassed by the definitions for nucleotide and/or amino acid sequences set forth in 37 C.F.R. § 1.821(a)(1) and (a)(2). However, this application fails to comply with the requirements of 37 C.F.R. § 1.821-1.825 for the reason(s) set forth below or on the attached Notice To Comply With Requirements For Patent Applications Containing Nucleotide Sequence And/Or Amino Acid Sequence Disclosures. Any questions regarding compliance with the sequence rules requirements specifically should be directed to the departments listed at the bottom of the Notice to Comply. Applicants are reminded that sequences appearing in the specification and/or drawings (e.g., see Figures 2, 4, and 10) must be identified by a sequence identifier (SEQ ID NO.:) in accordance with 37 Sequence identifiers for sequences appearing in the C.F.R. § 1.821(d). drawings may appear in the Brief Description of the Drawings. Applicant must provide appropriate amendments to the specification and/or drawings inserting the required sequence identifiers. Extensive amendments may necessitate the submission of a substitute specification. If the requisite SEQ ID NOS.: are not present in the sequence listing, a substitute sequence listing will be required.

Applicant is given ONE MONTH, or THIRTY DAYS, whichever is longer, from the mailing date of this letter within which to comply with the sequence

Serial No.: 10/080,772 Applicants: Haynes, B. F., et al.

rules, 37 C.F.R. § 1.821-1.825. Failure to comply with these requirements will result in ABANDONMENT of the application under 37 C.F.R. § 1.821(g). Extensions of time may be obtained by filing a petition accompanied by the extension fee under the provisions of 37 C.F.R. § 1.136(a). In no case may an applicant extend the period for reply beyond the SIX MONTH statutory period. Direct the reply to the undersigned. Applicant is requested to return a copy of the attached Notice to Comply with the reply.

Correspondence

Any inquiry concerning this communication should be directed to Jeffrey S. Parkin, Ph.D., whose telephone number is (571) 272-0908. The examiner can normally be reached Monday through Thursday from 10:30 AM to 9:00 PM. A message may be left on the examiner's voice mail service. If attempts to reach the examiner are unsuccessful, the examiner's supervisor, Bruce R. Campell, Ph.D., can be reached at (571) 272-0974. Direct general status inquiries to the Technology Center 1600 receptionist at (571) 272-1600. Informal communications may be submitted to the Examiner's RightFAX account at (571) 273-0908.

Applicants are reminded that the United States Patent and Trademark Office (Office) requires most patent related correspondence to be: a) faxed to the Central FAX number (571-273-8300) (updated as of July 15, 2005), b) hand carried or delivered to the Customer Service Window (now located at the Randolph Building, 401 Dulany Street, Alexandria, VA 22314), c) mailed to the mailing address set forth in 37 C.F.R. § 1.1 (e.g., P.O. Box 1450, Alexandria, VA 22313-1450), or d) transmitted to the Office using the Office's Electronic Filing System. This notice replaces all prior Office notices specifying a specific fax number or hand carry address for certain patent related correspondence. For further information refer to the Updated Notice of Centralized Delivery and Facsimile Transmission Policy for Patent Related Correspondence, and Exceptions Thereto, 1292 Off. Gaz. Pat. Office 186 (March 29, 2005).

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Please direct all replies to the United States Patent and Trademark Office via one of the following: 1) Electronically submitted through EFS-Bio (http://www.uspto.gov/ebc/efs/downloads/documents.htm, EFS Submission User Manual - ePAVE); 2) Mailed to: Mail Stop Sequence, Commissioner for Patents, P.O. Box 22313-1450, Alexandria, VA 22313-1450; and 3) Hand Carry, Federal Express, United Parcel Service or other delivery service to: U.S. Patent and

Serial No.: 10/080,772 Applicants: Haynes, B. F., et al.

Trademark Office, Mail Stop Sequence, Customer Window, Randolph Building, 401 Dulaney Street, Alexandria, VA 22314.

Respectfully,

Jeffrey S. Parkin, Ph.D.

Primary Examiner
Art Unit 1648

19 March, 2007

PC1.com	census	1.ATGGGGAATGGACAGGGGGGAGACTGGAAGACGGCCGTTAAGAGATGTAGTAATGTTGCTGTAGGGGTAGGGAGTAAGAGTAGAAAGTTTGGAGAAGGAA	
PC3	84		
	#5	·	
	#6		
	910	·	
	812		
	013		
	814		
	115		
	916		
BHJ.		***************************************	
	\$3		
	910		
	#20 ·		
	9 22		
	#24		
	941		
	642		
	843		
		ACTITINGUIGGGCCATANGGATGGCTRATGTARCTACAGGACCAGAACCTGGTGATATROCAGAGAATTTAGAACAGTTAAGATCGATTATTTGTGATTI 200	
		ACTITAGIOGOCATAMONICOCIMIO	
		TT	
	•		
		AAA	
		••••	
-			-
	-		_
		· · · · · · · · · · · · · · · · · · ·	
7000 -		· · · · · · · · · · · · · · · · · · ·	
	oncensus	201: ACATGRENGARGAGNACRATATGGATETAGGARATTGATATGGGRATTROCACTTTANAMGTTTTTGCAGTAGCTGGRATTTTANATATGACTGTG	
	C1 #4	201: ACATGACAGAAGAACAATATGGATCEAGTAAAGAATTGATATGGCAATTACCACTTTAAAAGTTTTTGCAGTACCTGGAATTTTAAATATGACTGTG	
	C2 #4 #5	201: ACATGRENGARGAGNACRATATGGATETAGGARATTGATATGGGRATTROCACTTTANAMGTTTTTGCAGTAGCTGGRATTTTANATATGACTGTG	
	C2 84 85 86	201: ACATGACAGAAGAACAATATGGATCEAGTAAAGAATTGATATGGCAATTACCACTTTAAAAGTTTTTGCAGTACCTGGAATTTTAAATATGACTGTG	
	C1 #4 #5 #6 #10	201: ACATGACAGAAGAACAATATGGATCEAGTAAAGAATTGATATGGCAATTACCACTTTAAAAGTTTTTGCAGTACCTGGAATTTTAAATATGACTGTG	
	C1 84 85 86 810 812	201: ACATGACAGAAGAACAATATGGATCEAGTAAAGAATTGATATGGCAATTACCACTTTAAAAGTTTTTGCAGTACCTGGAATTTTAAATATGACTGTG	
	C1 #4 #5 #6 #10	201: ACATGACAGAAGAACAATATGGATCEAGTAAAGAATTGATATGGCAATTACCACTTTAAAAGTTTTTGCAGTACCTGGAATTTTAAATATGACTGTG	
	C1 84 85 86 810 812	201: ACATGACAGAAGAACAATATGGATCEAGTAAAGAATTGATATGGCAATTACCACTTTAAAAGTTTTTGCAGTACCTGGAATTTTAAATATGACTGTG	
	C1 84 85 86 810 812 913	201: ACATGACAGAAGAACAATATGGATCEAGTAAAGAATTGATATGGCAATTACCACTTTAAAAGTTTTTGCAGTACCTGGAATTTTAAATATGACTGTG	
	C2 84 85 86 810 812 913	201: ACATGACAGAAGAACAATATGGATCEAGTAAAGAATTGATATGGCAATTACCACTTTAAAAGTTTTTGCAGTACCTGGAATTTTAAATATGACTGTG	
	C1 84 85 86 810 812 913 914 815	201: ACATGACAGAAGAACAATATGGATCEAGTAAAGAATTGATATGGCAATTACCACTTTAAAAGTTTTTGCAGTACCTGGAATTTTAAATATGACTGTG	
P	C1 84 85 86 810 812 913 914 815	201; ACATGACAGAAGAGAACAATATGGATCTAGTAAAGAAATTGATATGGCAATTACCACTTTAAAAATTTTTGCAGTAGCTGGAATTTTAAATATGACTGGC	
P	C1 #4 #5 #6 #10 #12 #13 #14 #15	201: ACATGACAGAAGAACAATATGGATCEAGTAAAGAATTGATATGGCAATTACCACTTTAAAAGTTTTTGCAGTACCTGGAATTTTAAATATGACTGTG	
P	C1 #4 #5 #6 #10 #12 #13 #14 #15 #16	201; ACATGACAGAAGAGAACAATATGGATCTAGTAAAGAAATTGATATGGCAATTACCACTTTAAAAATTTTTGCAGTAGCTGGAATTTTAAATATGACTGGC	
P	C1 #4 #5 #10 #10 #12 #13 #14 #15 #16	201; ACATGACAGAAGAGAACAATATGGATCTAGTAAAGAAATTGATATGGCAATTACCACTTTAAAAATTTTTGCAGTAGCTGGAATTTTAAATATGACTGGC	
P	C1 84 85 86 810 812 913 914 815 816	201; ACATGACAGANGAGAACAATATGGTAAAGAAATTGATATGGCAATTACCACTTTAAAAATTTTTGCAGTACCTGGAATTTTAAATATGACTGGG	
P	C1 84 85 86 810 812 913 914 815 816 819 819 819 819 819 819 819 819 819 819	201 : NCATURCHGRAGGRACANTATOGRACTEMOTRANGRANTTGATNITOGRANTTACCACTITIANAMITITTIGCAGTAGCTGGRATTITANATATGACTGGC)	
P	C1 84 85 86 810 812 913 914 815 816 93> 91 83 810 820 822 824	201: ACATGACAGANGAGAACAATATGGGAATTGATATGGCAATTACCACTTTAAAAMTTTTTGCAGTAGCTGGAATTTTAAATATGACTGGG	
P	C1 84 85 86 810 812 013 014 815 816 819 81 83 810 820 820 824 841	201 : NCATURCOGRACIANTATOGRACTICINGTARAGRANTTGATATOGCARTTACCACTITARAMITTTTGCAGTAGCTGGARTTITARATATGACTGCC)	
P	C1 84 85 86 810 812 913 914 815 816 83 810 820 822 824 841	201 : NCATURCOGRACIANTATOGRACTICINGTARAGRANTTGATATOGCARTTACCACTITARAMITTTTGCAGTAGCTGGARTTITARATATGACTGCC)	
P	C1 84 85 86 810 812 013 014 815 816 819 81 83 810 820 820 824 841	201 : NCATURCAGRAGICA ACRATATOGRATCENGTARAGRAATTGATATOGRATTACCACTTTARAAMTTTTTGCAGTAGCTGGRATTTTARATATGACTGTG	
P	C1 84 85 86 810 812 913 914 815 816 83 810 820 822 824 841	201 : ACATGRICAGRACIAGRACIATATOGRICTIAGITARAGRAATTGATATOGRIATTACACCTTTARAAMTTTTTGCAGTAGCTGGRATTTTARATTATGACTGGC	
P	C1 84 85 86 810 812 913 914 815 816 83 810 820 822 824 841	201; ACATGACAGAAGAGAACAATATOGATCTAGTAAAGAAATTGATATGGCAATTACCACTTTAAAAATTTTTGCAGTAGCTGGAATTTTAAATATGACTGGG	D
P	C1 84 85 86 810 812 913 914 815 816 83 810 820 822 824 841	201 : NCATURCAGRAGICA ACRATATOGRATCENGTARAGRANTEGATATOGRATTACCACTITARA AMITTITUCAGTAGCT GRATTITARATATCACTOCC)	D
P	C1 84 85 86 810 812 913 914 815 816 83 810 820 822 824 841	201 ; ACATGRICAGRAGGAACAATATOGRICTAGTAAAGRAATTGATATOGCAATTACCACTTTAAAAATTTTTGCAGTAGCTGGAATTTTAAATATGACTGTG	D
P	C1 84 85 86 810 812 913 914 815 816 83 810 820 822 824 841	201 NCATGREGRAGICA ACANTATOGRATCZIGTANAGRANTTGATNTGGENATTACCACTTTANAMITTTTGCAGTAGCTGGAATTTTANATATGACTGTC	D
P	C1 84 85 86 810 812 913 914 815 816 83 810 820 822 824 841	201 : NCATURCAGARGEGRACANTATOGRACTEMOTARAGRANTTGATATOGRANTTACCACTTTANAMTTTTTGCAGTAGCTGGRATTTTANATATGACTGGC)	D
P	C1 84 85 86 810 812 913 914 815 816 83 810 820 822 824 841	201 ; ACATGRICAGRAGGAACAATATOGRICTAGTAAAGRAATTGATATOGCAATTACCACTTTAAAAATTTTTGCAGTAGCTGGAATTTTAAATTATGACTGTG	D
P	C1 84 85 86 810 812 913 914 815 816 83 810 820 822 824 841	201 : NCATGROGRAGIGNACANTATOGRACTENGTANAGRANTTGATNTOGCANTTACCACTTTANAMTTTTTGCAGTAGCTGGAATTTTANATATGACTGTC	D
P	C1 84 85 86 810 812 913 914 815 816 83 810 820 822 824 841	201; ACATGRICAGRAGGA ACAATATGGGTAARGAAATTGATATGGCAATTTACACTGTTTAAAAGTTTTTGCAGTAGCTGGAATTTTAAATATGACTGTC	D
P	C1 84 85 86 810 812 913 914 815 816 83 810 820 822 824 841	201; ACATGRICAGRAGGA ACAATATGGGATCTAGTAAAGAAATTGATATGGCAATTTACACTGTC	D
P	C1 84 85 86 810 812 913 914 815 816 83 810 820 822 824 841	201; ACATGRICAGRAGGA ACAATATGGGTAARGAAATTGATATGGCAATTTACACTGTTTAAAAGTTTTTGCAGTAGCTGGAATTTTAAATATGACTGTC	D
P	C1 84 85 86 810 812 913 914 815 816 83 810 820 822 824 841	201; ACATGRICAGRAGGA ACAATATGGGATCTAGTAAAGAAATTGATATGGCAATTTACACTGTC	D
P	C1 84 85 86 810 812 913 914 815 816 83 810 820 822 824 841	201 NCATCINCAGAMCAGANCANTATOGIATCTINGTAANGAAATTGATATOGCAATTTAANAGTTTTTGCAGTAGCTGGAATTTTAAATATGACTGTG 3,	D
P	C1 84 85 86 810 812 913 914 815 816 83 810 820 822 824 841	201 ACATGACMGAACAATATGGGATCEAGTAAAGAAATTGATATGGCAATTACCACTTTAAAACTTTTGCAGTAGCTGGAATTTTAAATTATGACTGTC	D
P	C1 84 85 86 810 812 913 914 815 816 83 810 820 822 824 841	201 ACATGACHGANGGANACAATATGGATCTAGTANAGANATTGATATGGCANTTACCACTTTANAMGTTTTTGCAGTACCTGGAATTTTAMATATGACTGTC	- D
P	C1 84 85 86 810 812 913 914 815 816 83 810 820 822 824 841	201 ACATGACHGANGGANACAATATGGATCTAGTANAGANATTGATATGGCANTTACCACTTTANAMGTTTTTGCAGTACCTGGAATTTTAMATATGACTGTC	D
P	C1 84 85 86 810 812 913 914 815 816 83 810 820 822 824 841	201 ACATGACHGRANGGRACAATATGGGATCTAGTAAAGGAATTGGCAATTACCACTTTAAAAGTTTTTGCAGTACCTGGAATTTTAAATGACTGTC	D
P	C1 84 85 86 810 812 913 914 815 816 83 810 820 822 824 841	201 MCMTCHACHGRANGRANCHATATGGGAACTTGGTAAAGAAATTGGCAATTTAAAAAGAAAG	D
P	C1 84 85 86 810 812 913 914 815 816 83 810 820 822 824 841	201 MCNTCHCAGANGAGANCANTATGGATCTAGTANAGANTTGATATGGCANTTACACTTTANAMGTTTTGCAGTAGCTGGAATTTTANATATGACTGTC	-
P	C1 84 85 86 810 812 913 914 815 816 83 810 820 822 824 841	201 MCMTCHACHGRANGBANCHATATGGGAATTGGGAATTTANAMGTTTTGCAGTAGGTGGAATTTTANATATGACTGTC	
P	C1 84 85 86 810 812 913 914 815 816 83 810 820 822 824 841	201. ACATOLOGIANCIANTATOGIATCTANAGANATTGATATOGICANTTACCACTTTANAMATTTTTGCAGTACCTGGAATTTTAAATATGACTGTC	0
P	C1 84 85 86 810 812 913 914 815 816 83 810 820 822 824 841	201 MCMTCHACHGRANGBANCHATATGGGAATTGGGAATTTANAMGTTTTGCAGTAGGTGGAATTTTANATATGACTGTC	0

FIG. 2A

	401.CTTATCCTATTCAACAGTAAATGGAGCACCACAGTATGTAGCCCTTGACCCCAAAATGGTGTCCATTTTTATGGAAAAAGCAGGAGAGGGGACTAGGAGG	
PC1 04	,	
#5	1	
8 5	1	
#10	;	
#12		
913		
014		
#15 .	1	
9 16	t	
PH1 #1	1	
#3	;CC	
\$10	;CC	
820	,1,	
8 22		
	,	
9 24	,	
#41	• • • • • • • • • • • • • • • • • • • •	
#42 ·	,CC	
#43	1	
	TERGERGITCCRACTETGGTTCRCRGCCTTTTCTGCTRATTTRACTTCRACTGCTACCATTACTTATGTCTGCGCCTGGGTTGCAGCAGTARA 600	
	and the second s	
	•	
	C	
	C	_
PC1concensus	601:CACATCTTACATGAAACACTGAAACAGATGACAGCTGAGTATGATGGTACTCATCCTCCTGATGGGCCTTAGACCCCTGCCCCTATTTCACCGCTGCGGAGA	
PCiconcensus PCI 94	AA	
	;	
PC1 D4		
PC1 04 85 86	;	
FC1 84 85 86 810		
FC1 84 85 86 810 812		
FC1 84 85 86 810 912 813		
FC1 B4 B5 B6 B10 B12 B13 B14		
FC1 84 85 86 810 912 813		
FC1 B4 B5 B6 B10 B12 B13 B14		
FC1 P4 85 86 910 913 814 915		
FC1 04 05 06 010 012 013 014 015		
PC1 04 05 06 010 010 013 014 015 016		
PC1 04 05 06 010 013 013 014 015 016		
FC1 04 05 06 06 010 013 014 015 016 FM1 01 03 93	A T	
FC1 P4 05 06 010 011 013 014 015 016 FF11 01 01 010 020	A T A A T A A A T A A A A A A A A A A A	
FC1 84 85 86 810 813 813 814 915 816 FR1 01 82 810 820	A T	,
FC1 04 05 06 010 013 013 014 015 016 FM1 01 010 020	A T	
FC1 04 05 06 0810 0813 0814 0815 0816 FM1 01 0820 0820	A T	
FC1 04 05 06 010 013 013 014 015 016 FM1 01 03 010 020 022 022	A T	
FC1 P4 05 06 010 013 013 014 015 016 FF11 01 03 010 022 024 041	A T	
FC1 04 05 06 010 013 013 014 015 016 FM1 01 03 010 020 022 022	A T	
FC1 P4 05 06 010 013 013 014 015 016 FF11 01 03 010 022 024 041	A T	
FC1 P4 05 06 010 013 013 014 015 016 FF11 01 03 010 022 024 041	A T	10
FC1 P4 05 06 010 013 013 014 015 016 FF11 01 03 010 022 024 041	TIATGGGAATAGGATTAACTCAAGAACAAGCGEAGCCCAGATTTGCACCAGCTAGAATGCAGTGTAGGGCATGGTATCTTGAAGCACTAGCAAGGTT 80	10
FC1 P4 05 06 010 013 013 014 015 016 FF11 01 03 010 022 024 041	TTATYOGANTAGGATTAACTCAAGAACAAGCGGAGCCCAGATTTGCACCAGCTAGAATGCAGTGTAGAGCATGGTATCTTGAAGCACTAGGAAAGTT 80	10
FC1 P4 05 06 010 013 013 014 015 016 FF11 01 03 010 022 024 041	TIATGGGAATAGGATTAACTCAAGAACAAGCGCAGCCCAGATTTCCACCAGCTAGAATGCAGTGTAGAGCATCTTGAAGCACTAGGAAAGTT 86	10
FC1 P4 05 06 010 013 013 014 015 016 FF11 01 03 010 022 024 041	TIATGGGAATAGGATTAACTCAAGAACAAGCGGAGCCCAGATTTCCACCAGCTAGAATGCAGTGGTAGGCATGGTATCTTGAAGCACTAGCAAGGTT 80	10
FC1 P4 05 06 010 013 013 014 015 016 FF11 01 03 010 022 024 041	TIATGGGAATAGGATTAACTCAAGAACAAGCGEAGCCCAGATTTCCACCAGCTAGAATGCAGTGTAGAGCATTGGAAGCACTAGGAAAGTT 80	10
FC1 84 85 86 810 913 813 814 915 616 FM1 81 83 810 820 822 824 841 843	TTATGGGAATAGGATTAACTCAAGAACAAGCGCAGCCCAGATTTCCACCAGCTAGAATGCAGTGTAGAGCATTGGAAGCACTAGGAAAGTT 86	10
PC1 P4 05 06 0810 0913 1913 1914 0915 0916 PR1 01 03 1910 0520 1922 1924 1941 1942 1943	TIATGOGRATAGGATTAACTCAAGAACAAGCGGAGCCCAGATTTCCACCAGCTAGAATGCAGTGGTAAGCATGCTATCTTGAAGCACTAGCAAAGTT 80	10
FC1 P4 05 06 0810 0913 1913 1914 0915 016 FM1 01 03 1910 1920 1922 1924 1941 1942 1943	TTATGGGAATAGGATTAACTCAAGAACAAGCGCAGCCCAGATTTCCACCAGCTAGAATGCAGTGTAGAGCATTGGAAGCACTAGGAAAGTT 86	
FC1 84 85 86 810 913 813 814 915 616 FM1 81 83 810 820 822 824 841 843	TIATGOGRATAGGATTAACTCAAGAACAAGCGGAGCCCAGATTTCCACCAGCTAGAATGCAGTGGTAAGCATGCTATCTTGAAGCACTAGCAAAGTT 80	10
FC1 P4 05 06 0810 0913 1913 1914 0915 016 FM1 01 03 1910 1920 1922 1924 1941 1942 1943	TIATGOGRATAGGATTAACTCAAGAACAAGCGGAGCCCAGATTTCCACCAGCTAGAATGCAGTGGTAAGCATGCTATCTTGAAGCACTAGCAAAGTT 80	10
PC1 P4 05 06 0810 0913 0914 0915 0916 PR1 01 03 0910 0920 0922 0924 0941 0942 0943	TIATGOGRATAGGATTAACTCAAGAACAAGCGGAGCCCAGATTTCCACCAGCTAGAATGCAGTGGTAAGCATGCTATCTTGAAGCACTAGCAAAGTT 80	
PC1 P4 05 06 0810 0913 0914 0915 0916 PR1 01 03 0910 0920 0922 0924 0941 0942 0943	TTATOOGANTAGGATTAACTCAAGANCAACAMGCGENGCCCAGATTTCCACCACCTAGANTGCACTAGGATCCTACGANAGTT 86 G-G-G-G-G-G-G-G-G-G-G-G-G-G-G-G-G-G-G	
PC1 P4 05 06 0810 0913 0914 0915 0916 PR1 01 03 0910 0920 0922 0924 0941 0942 0943	TTATOOGAATAGGATTAACTCAAGAACAAGGGGAGCCCAGATTOCACCAGCTAGAATGCAGTGTAGAGCATGCTATCTTGAAGCACTAGGAAAGTT 80	
PC1 P4 05 06 0810 0913 0914 0915 0916 PR1 01 03 0910 0920 0922 0924 0941 0942 0943	TTATOGGANTAGGATTRACTCAAGAACAACCAGCCCAGATTTCCACCAGCTAGAATGCAGGTATCTTGAAGCACTAGGAAAGTT 86	
PC1 P4 05 06 0810 0913 0914 0915 0916 PR1 01 03 0910 0920 0922 0924 0941 0942 0943	TTATOGGAATAGGATTAACTCAAGAACAAGCGGAGCCCAGATTTCCACCAGCTAGAATGCAGTGTAAGGCATTCTTGAAGCACTAGAAAGTT 80	
PC1 P4 05 06 0810 0913 0914 0915 0916 PR1 01 03 0910 0920 0922 0924 0941 0942 0943	TTATOOGAATAGGATTAACTCAAGAACAAGCGEAGCCCAGATTCCACCACCTAGAATGCAGTGTEAGAGCATTGGAAGCACTAGGAAAGTT 60 G	
PC1 P4 05 06 0810 0913 0914 0915 0916 PR1 01 03 0910 0920 0922 0924 0941 0942 0943	TATOOCAATAGGATTAACTCAAGAACAAGCCCAGCCCAGATTCCACCAGCTAGAATGCAATGTAAGGCATTCTAAGCACTAGGAAAGTT 86	
PC1 P4 05 06 0810 0913 0914 0915 0916 PR1 01 03 0910 0920 0922 0924 0941 0942 0943	TTATOOGAATAGGATTAACTCAAGAACAAGCGEAGCCCAGATTCCACCACCTAGAATGCAGTGTEAGAGCATTGGAAGCACTAGGAAAGTT 60 G	
FC1 P4 05 06 0810 0913 1913 1914 0915 016 FM1 01 03 1910 1920 1922 1924 1941 1942 1943	TTATOOGAATAGGATTAACTCAAGAACAACAAGCGGAGCCCAGATTTCCACCAGCTAGAATCGAAGTGTAAGGATTCTTCAAGCACTAGCAAAACTT 80	
PC1 P4 05 06 0810 0913 0914 0915 0916 PR1 01 03 0910 0920 0922 0924 0941 0942 0943	TTATOOGRANTAGGATTAACTICAAGAACAACAAGAGCGCAGGCCCAGGATTICCACCCAGCTAGAATCCAGTATGCTAGGCATGCTATCTTGAAGCACTAGGAAAGTT 60 G-	
PC1 P4 05 06 0810 0913 0914 0915 0916 PR1 01 03 0910 0920 0922 0924 0941 0942 0943	TTATOOGAATAGGATTAACTCAAGAACAACAAGCGGAGCCCAGATTTCCACCAGCTAGAATCGAAGTGTAAGGATTCTTCAAGCACTAGCAAAACTT 80	

PC1 concensus	601 - GGCAGCCATAAAAGCTAAATUTCCCCCAAAGCAAATTAAAGCAAAAAAGCTAAAATTAAAGCAAAAAAGCTAAATTAAAGCAAAATTAAAGCAAAATTAAAGCAAAAAAGCTAAAATTAAAGCAAAATTAAAGCAAAAAAAA	
PC1 #4	,CC	
#5		
\$ 6	1	
#10	1	
013	ţ	
#13	,	
#14	}	
#15	1	
#16		
PH1 81	ţ	
9 3	1	
210	ţ	
#20	1	
#22	ş	
#24	1	
941	ţ	
#42		
843	ţ	•
	CANGROCRGRACACROCTGRAGTRARGCTGTRTTTRARACRATCTTTGRGCCATGCCRATGCTRACCCRGRTTGTRARAGGGCRATGRGTGTCTTRARC	1000
	••••	
	,	
		•
	TO THE PROPERTY OF A CONTRACT AND A PROPERTY AND A	
PC1concensus 1	.001:CAGAGAGTACTTTAGAGGAAAAACTGAGAGCCTGTCAAGAGGTAGGATCACCAGGATATAAAATGCAGTTGTTAGCAGAAGCTCTTACAAGAGTTCAGAC	
PC1 #4	1001:CAGAGAGTACTTTAGAGGAAAAACTGAGAGCCTGTCAAGAGGTAGGATCACCAGGATATAAAATGCAGTTGTTAGCAGAAGCTCTTACAAGGGTTCAGAG 	
PC1 #4	1001:CAGAGAGTACTTTAGAGGAAAAACTGAGAGCCTGTCAAGAGGTAGGATCACCAGGATATAAAATGCAGTTGTTAGCAGAAGCTCTTACAAGGGTTCAGAG 	
PC1 #4 #5	1001:CAGAGAGTACTTTAGAGGAAAAACTGAGAGCCTGTCAAGAGGTAGGATCACCAGGATATAAAATGCAGTTGTTAGCAGAAGCTCTTACAAGGGTTCAGAC	
PC1 #4 #5 #6 #10		
FC1 #4 #5 #6 #10 #12	1	
FC1 #4 #5 #6 #10 #12 #13		
PC1 #4 #5 #6 #10 #12 #13 #14		
PC1 #4 #5 #6 #10 #12 #13 #14 #15		
PC1 #4 #5 #6 #10 #12 #13 #14		
PC1 #4 85 #6 #10 #12 #13 914 #15		
PC1 #4 #5 #6 #10 #12 #13 #14 #15 #16		
PC1 #4 #5 #6 #10 #12 #13 #14 #15 #16		
PC1 #4		
PC1 #4 #5 #6 #10 #12 #13 #14 #15 #16 PH1 #1 #3 #10 #20		
PC1 #4 #5 #6 #10 #12 #13 #14 #15 #16 PH1 #1 #3 #10 #20 #22		
PC1 #4 #5 #6 #10 #12 #13 #14 #15 #16 PH1 #1 #3 #10 #20 #24		
PC1 #4 #5 #6 #10 #12 #13 #14 #15 #16 PH1 #1 #3 #10 #20 #22 #24 #41		
PC1 #4 #5 #6 #10 #12 #13 #14 #15 #16 PHI #1 #3 #10 #20 #22 #24 #41 #42		
PC1 #4 #5 #6 #10 #12 #13 #14 #15 #16 PE1 #1 #3 #10 #20 #22 #24 #41		
PC1 #4 #5 #6 #10 #12 #13 #14 #15 #16 PHI #1 #3 #10 #20 #22 #24 #41 #42	AGTTCANACANGAGGATCINGACCRACGTGTTTCANTIGIANANACCAGGCCACCTGGCCANACANTGTAGAGAGAGATGTAACNACTGTGGA	1200
PC1 #4 #5 #6 #10 #12 #13 #14 #15 #16 PHI #1 #3 #10 #20 #22 #24 #41 #42	AGTTCANACAACAGGATCTACACCAACGTGTTTCAATTGTAAAAAAACCAGGCCACCTGGCCAAACAATGTAGAGAAGGAAAGAGATGTAACAACTGTGCA 1	1200
PC1 #4 #5 #6 #10 #12 #13 #14 #15 #16 PHI #1 #3 #10 #20 #22 #24 #41 #42	AGTTCANACANGAGGATCTAGACCAACGTGTTTCAATTGTAAANAACCAGGCCCACCTGGCCAAACAATGTAGAGAAGCAAAGAGATGTAACAACTGTGGCA	2200
PC1 #4 #5 #6 #10 #12 #13 #14 #15 #16 PHI #1 #3 #10 #20 #22 #24 #41 #42	AGTTCANACANGAGGATCTAGACCANGGTGTTCANTTGTANANANCCAGGCCACCTGGCCANACANTGTAGAGAAGGATGTAAGAGCTGTGGA 1	2200
PC1 #4 #5 #6 #10 #12 #13 #14 #15 #16 PHI #1 #3 #10 #20 #22 #24 #41 #42	AGTTCANACAACAGGATCTACACCAACCTGTTTCAATTGTAANANACCAGGCCACCTGGCCAAACAATGTAGAGAAGGCAAAGAGATGTAACAACTGTGCA T	1200
PC1 #4 #5 #6 #10 #12 #13 #14 #15 #16 PH1 #1 #3 #10 #20 #22 #24 #41 #42 #43	AGTTCANACAAGAGGATCTAGACCAACGTGTTTCAATTGTAAAANAACCAGGCCACCTGGCCAAACAATGTAGAGAAGGCAAAGAGATOTAACAACTGTGGA T	2200
PC1 #4 #5 #6 #10 #12 #13 #14 #15 #15 #16 PH1 #1 #3 #10 #20 #24 #41 #41 #42 #43	AGTTCANACANGAGGATCTAGACCANGGTGTTTCANTTGTANANANCCAGGCCACCTGGCCANACANTGTAGAGAAGATGTAAGAGATGTAACAACTGTGGA 1	2200
PC1 #4 #5 #6 #10 #12 #13 #14 #15 #15 #16 PHI #1 #3 #10 #20 #24 #41 #42 #43	AGTTCANACANGAGGATCTAGACCAACGTGTTTCANTTGTANANACCAGGCCCACCTGGCCANACAATGTAGAGAAGGAAAGAGATGTAACAACATGTAGAGAAACAATGTAGAGAAAGAA	
PC1 #4 #5 #6 #10 #12 #13 #14 #15 #15 #16 PH1 #1 #3 #10 #20 #24 #41 #41 #42 #43	AGTTCANACAACAGGATCTACACCAACCTGTTTCAATTGTAAANAACCAGGCCACCTGGCCAAACAATGTAGGAAGGCAAAGAGATGTAACAACTGTGCCA T	1200
PC1 #4 #5 #6 #10 #12 #13 #14 #15 #15 #16 PHI #1 #3 #10 #20 #24 #41 #42 #43	AGTTCANACANGAGGATCTAGACCAACGTGTTTCANTTGTANANACCAGGCCCACCTGGCCANACAATGTAGAGAAGGAAAGAGATGTAACAACATGTAGAGAAACAATGTAGAGAAAGAA	1200
PC1 #4 #5 #6 #10 #12 #13 #14 #15 #15 #16 PHI #1 #3 #10 #20 #24 #41 #42 #43	AGTTCANACANGAGGATCTAGACCAACGTUTTCAATTGTAANANACCAGGCCACCTGGCCAAACAATGTAGAGAAGGAAAGAAA	
PC1 #4 #5 #6 #10 #12 #13 #14 #15 #15 #16 PHI #1 #3 #10 #20 #24 #41 #42 #43	AGTTCANACANGAGGATCENGACCANGGGGTTTCANTTGENANNANCCAGGCCACCTGGCCANACANTGENGAGANGGAGANGAGATGTANGACCTGGGCA	
PC1 #4 #5 #6 #10 #12 #13 #14 #15 #15 #16 PHI #1 #3 #10 #20 #24 #41 #42 #43	AGTTCANACANGAGGATCTAGACCAACGTGTTTCAATTGTAANANACCAGGCCACCTGGCCAAACAATGTAGAGAAAGAAATGTAACAACTGTAACAACTGTGTGCA	1200
PC1 #4 #5 #6 #10 #12 #13 #14 #15 #16 PH1 #1 #3 #10 #20 #22 #24 #41 #42 #43	AGTTCANAICANGAGGATCTAGACCANGGTGTTTCNATTGTAANANACCAGGCCACCTGGCCANACAATGTAGAGAAGGAAAGAGATGTAAONACTGTGGA T	1200
PC1 #4 #5 #6 #10 #12 #13 #14 #15 #16 PH1 #1 #3 #10 #20 #22 #24 #41 #42 #43	AGTTCANACANGAGGATCTAGACCANGOTGTTCANTTGTANANACCAGGCCACCTGGCCANACAATGTAGAGAAGGAAAGAATGTAACAACTGTAACAACTGTAGAGAAGGAAAGAATGTAACAACTGTAGAGAAGGAAAGAATGTAACAACTGTAGAGAAGGAAAGAATGTAACAACTGTAGAGAAGGAAAGAATGTAACAACTGTAGAGAAGGAAAGAATGTAACAACTGTAGAGAAGGAAAGAATGTAACAACTGTAGAGAAGGAAAGAATGTAACAACTGTAGAGAAGGAAAGAATGTAACAACTGTAGAGAAGGAAAGAATGTAACAACTGTAGAGAAGGAAAGAATGTAACAACTGTAGAGAAGGAAAGAATGTAACAACTGTAGAGAAGGAAAGAATGTAACAACTGTAGAGAAGGAATGTAACAACTGTAGAGAAGGAATGTAACAACTGTAGAGAAGGAAAGGAATGTAACAACTGTAGAGAAGGAATGTAACAACTGTAGAGAAGGAATGTAACAACTGTAGAGAAGGAATGTAACAACTGTAGAGAAGGAATGTAACAACTGTAGAGAAGGAATGTAACAACTGTAGAGAAGGAATGTAACAACTGTAGAGAAGGAATGTAACAACTAGTAGAGAAGGAATGTAACAACTGTAGAGAAGGAATGTAACAACTGTAGAGAAGGAATGTAACAACTGTAGAGAAGGAATGTAACAACTGTAGAGAAGGAATGTAACAACTGTAGAGAAGGAATGTAACAACTGTAGAGAAGGAATGTAACAACTGTAGAGAAGGAATGTAACAACTGTAGAGAAGGAATGTAACAACTGTAGAGAAGGAATGTAACAACTGTAGAGAAGGAATGTAACAACTGTAGAGAAGGAATGTAACAACTGTAGAGAAGGAATGTAACAACTGTAGAGAAGGAATGTAACAACTGTAGAGAAGGAATGTAACAACTGTAGAGAAGGAATGTAACAACTGTAGAGAAGGAATGTAACAACTGTAGAGAAGGAATGTAACAACTGTAGAGAAGGAAG	
PC1 #4 #5 #6 #10 #12 #13 #14 #15 #16 PH1 #1 #3 #10 #20 #22 #24 #41 #42 #43	AGTYCANAČANGAGGATCTACACCAACGTGTTTCAATTGTAAAAAAACCAGGCCACCTGGCCAAACAATGTAGAGAAAGGAAAGAGATGTAACAÁCTGTGGA T T T T T T T T T T T T T T T T	1200
PC1 #4 #5 #6 #10 #12 #13 #14 #15 #16 PH1 #1 #3 #10 #20 #22 #24 #41 #42 #43	AGTICANACAAGAGGATCIAGACCAACGTUTITCAATTGIAAAAAACCAGGCCACCTGGCCAAACAATGTAGAGAAGGAAAGAGTGTAACAACTGTGGA T	1200
PC1 #4 #5 #6 #10 #12 #13 #14 #15 #16 PH1 #1 #3 #10 #20 #22 #24 #41 #42 #43	AGTTCANAČANGAGGATCTAGACCAACGTGTTCANTTGTANANAACCAGGCCACCTGGCCANACAATGTAGAGAAGGAAAGAGATGTAACAÁCTGTGGA	
PC1 #4 #5 #6 #10 #12 #13 #14 #15 #15 #16 PHI #1 #3 #10 #20 #24 #41 #42 #43	AGTICANACAAGAGGATCIAGACCAACGTUTITCAATTGIAAAAAACCAGGCCACCTGGCCAAACAATGTAGAGAAGGAAAGAGTGTAACAACTGTGGA T	

FIG. 2C

	•
neus	1201.ANACCTGGTCACTTAGCTGCTAATTGCTGGCAAAGAGGTAAAAAAAA
4	,
5	
6	
10	
12	
13	
14	
15	,
16	·
	•
1	1
3	
10	1
30	
22	
24	
41	
42	
43 -	
	ACCOCUMINAACUAAGTGEAGCAAATGGTGCCATCTGCACCTCCAATGGAAGACAGGAAATTGTTAGATTTATAA 1353
	ACCEPTAGE CONTRACTOR OF THE PROPERTY OF THE PR
	G
	·
	G
	G

FIG. 2D

PC1 con	ceasus	i.mgngggrdwetavercsnvavgvgsksrkpgegnfrwairmarvttgrepgdipenleolrsiicdlhdrreoygsskeidmaittlkvpavagilantv
PC1		A
	••	
	#5	:AA
	#6	yy
	#10	
	#12	V
	#13	•
	914	***************************************
	#15	
	01 6	
		·
PH1	41	
	13	
	#10	
	#20	
	#32	
	8 24	
		=
	#41	
	842	······
	843	
		STAAAABHMYAQMGLDTRPSIKESGGKESGPPQAYPIQTVMGAPQYVALDPKMVSIPMBKAREGLGGBEVQLMPTAFSAMLTSTDMATLIMSAPGCAADK 200
		200
		•
		,
		G
		G
		G
		G
		••••••••••••••••••••••••••••••••••••••
		•
		201.BILDETLKOMTABYDRTHPPDGPRPLPYPTAABIMGIGLTQEQQABPRPAPARNQCRANYLEALGKLAAIKAKSPRAVQLKQGAKEDTSSPIDRLPAQID
	icensus	,
		,
	#4	
	#4 #5 #6	
	#4 #5 #6 #10	
	#4 #5 #6 #10 #12	ID
	#4 #5 #6 #10	
	#4 #5 #6 #10 #12 #13	ID
	#4 #5 #6 #10 #12 #13 #14	ID
	#4 #5 #6 #10 #12 #13 #14 #15	
	#4 #5 #6 #10 #12 #13 #14	ID
	#4 #5 #6 #10 #12 #13 #14 #15	
PCI	#4 #5 #6 #10 #12 #13 #14 #15	
PCI	#4 #5 #6 #10 #12 #13 #14 #15 #16	
PCI	#4 #5 #6 #6 #10 #12 #13 #14 #15 #16 #71 #71 #71 #71 #71 #71 #71 #71 #71 #71	- - - - - - - - - -
PCI	#4 #5 #6 #10 #12 #13 #14 #15 #16 #10 #20 #20 #22	
PCI	#4 #5 #6 #10 #12 #14 #15 #16 #10 #20 #24	- D
PCI	#4 #5 #6 #10 #11 #14 #15 #16 #10 #20 #20 #24 #41	
PCI	#4 #5 #6 #10 #12 #14 #15 #16 #10 #20 #24	- D
PCI	#4 #5 #6 #10 #11 #14 #15 #16 #10 #20 #20 #24 #41	
PCI	#4 #5 #6 #10 #11 #14 #15 #16 #10 #20 #20 #24 #41	QEQMTARVILYLIQSLS IAMANPOCTRAMSHLKPESTLBRILRACQEVGSPOTINGULARALTRYOTYOTRGSRPTCPMCKKPCHLAKOCPRAKECRICG 400
PCI	#4 #5 #6 #10 #11 #14 #15 #16 #10 #20 #20 #24 #41	QEQUIARVILYLIQSLSIAMAMPDCKRAMSHLKPESTLBEILRACQEVGSPOTIMQLLARALTRVQTVQTRGSRPTCPMCKKPGHLAKQCRBAKKCRMCU 400
PCI	#4 #5 #6 #10 #11 #14 #15 #16 #10 #20 #20 #24 #41	QEQUITARVKLYLIQSLSIAMANPDCKRAMSHLKPESTLEBKLRACQEVGSPOTINQLLARALTRVQTVQTRGSRPTCPMCKKPGHLAKQCEBAKRCENCG 400
PCI	#4 #5 #6 #10 #11 #14 #15 #16 #10 #20 #20 #24 #41	QEQUITARVKLYLIQSLSIAMANPDCKRAMSHLKPESTLEBKLRACQEVGSPOTINQLLARALTRVQTVQTRGSRPTCPMCKKPGHLAKQCEBAKRCENCG 400
PCI	#4 #5 #6 #10 #11 #14 #15 #16 #10 #20 #20 #24 #41	QEQNIAEVELYLQSLS IAMAMPDCERAMSHLEPESTLEBELRACQEVGSPOTMQLLABALTRYOTVQTRGSRPTCPMCERPCHLAEQCERAERCENCG 400
PCI	#4 #5 #6 #10 #11 #14 #15 #16 #10 #20 #20 #24 #41	QEQUIARVILYLIQSLSIANAMPDCTRAMSHLKPESTLBEILRACQEVGSPOTINQLLARALTRVQTVQTRGSRPTCFMCKKPGHLAKQCREAKRCRNCU 400
PCI	#4 #5 #6 #10 #11 #14 #15 #16 #10 #20 #20 #24 #41	QEQUITARVELYLIQSLS I AMAMPDCERAMSHLEPESTLERILRACQBVGSPQTIMQLLABALTRVQTVQTRGSRPTCFMCKEPGHLAEQCBBARGCBMCG
PCI PHI :	#4 #5 #6 #10 #11 #14 #15 #16 #10 #20 #24 #41 #42 #43	QEQNIARVILYLQSLSIANAMPDCTRAMSHLEPESTLEBILRACQEVGSPOTMQLLABALTRYOTVQTRGSRPTCPMCHEPCHLAEQCERAERCENCG 400
PCI PHI :	#4 #5 #6 #10 #11 #14 #15 #16 #10 #20 #24 #41 #42 #43	QEQUITAEVELYLEQSLS IAMAMPDCERAMSHLEPESTLEBEL RACQUEVGSPOTEMQLLABALTRYOTYOTEGSRPTCPMCHEPCHLAUCCERAMSCERICG 400
PCI	#4 #5 #6 #10 #11 #14 #15 #16 #10 #20 #24 #41 #41	QEQUITAEVELYLEQSLS IAMAMPDCERAMSHLEPESTLEBEL RACQUEVGSPOTEMQLLABALTRYOTYOTEGSRPTCPMCHEPCHLAUCCERAMSCERICG 400
PCI PHI :	#4 #5 #6 #10 #11 #14 #15 #16 #10 #20 #24 #41 #41	1 - D -
PCI	#4 #5 #6 #10 #11 #14 #15 #16 #10 #20 #24 #41 #41	QEQUITAEVELYLEQSLS IAMAMPDCERAMSHLEPESTLEBEL RACQUEVGSPOTEMQLLABALTRYOTYOTEGSRPTCPMCHEPCHLAUCCERAMSCERICG 400
PCI	#4 #5 #6 #10 #11 #14 #15 #16 #10 #20 #24 #41 #41	
PCI	#4 #5 #6 #10 #11 #14 #15 #16 #10 #20 #24 #41 #41	
PCI	#4 #5 #6 #10 #11 #14 #15 #16 #10 #20 #24 #41 #41	QEQUITARVILLUQSLSIANAMPDCKRAMSHLKPESTLERKLRACQEVGSPOTINIQLLARALTRVQTVQTRGSRPTCPMCKKGGHAKQCREAKRCCRICO 400
PCI	#4 #5 #6 #10 #11 #14 #15 #16 #10 #20 #24 #41 #41	QEQUITARVILYLIQSLSI AMAMPDCKRAMSHLKPESTLEBKLRACQEVGSPOTINQLLABALTRVQTVQTRGSRPTCFMCKKKQSHAKQCRBAKRCNNQ 400
PCI	#4 #5 #6 #10 #11 #14 #15 #16 #10 #20 #24 #41 #41	1 - D
PCI	#4 #5 #6 #10 #11 #14 #15 #16 #10 #20 #24 #41 #41	1 - D
PCI	#4 #5 #6 #10 #11 #14 #15 #16 #10 #20 #24 #41 #41	1 - D
PCI	#4 #5 #6 #10 #11 #14 #15 #16 #10 #20 #24 #41 #41	QEQUITARVELYLIQSLS I AMANDOCKEAMSHLEPESTLESKLERACQEVGSPOTINQLIABALITRVQTVQTEGSEPTCFMCKEPGHLAEQCERAKECENCG 400
PCI	#4 #5 #6 #10 #11 #14 #15 #16 #10 #20 #24 #41 #41	1 - D

401: EPGHLAANCHQEGEKTPGNGENGPAAAFVNQVQQMVPSAPPMEDEELLDL 450
;PP
400:
G

\

FIG. 2F

	٠,	, ATCCCCA ATGCCCCCCCCCCCCCCCCCCCCCCCCCCCC
	•	
ACTITINGGTOGGCCATANGGRAGGACGAGGAGGAGGAGGAGGAGGAGGAGGAGGAGGATTATACGAGGACTAAAAAGTTTAGGACGATTATATATA		
ACTITAGGTOGGCCATANGUATGGCTAATGTAACTACAGGACGAGAGACTGGTGATATACCAGAGAATTTAGAACAGTTAAGATGATTATTTUTCATTTT -TCAT-AT-AT-AT-ACT-ACT-AC		
ACTITINGGIOGOCCATANGGIACCACAGACGACGACGACGACGACGACATATACCAGAGAATTTAGAACAGTTAAGATCGATTATTAUTGATTT -T-C-AT-AC-ATATC-T-AC-G-G-T-GCT-C-AT-AC-G-G-T-GCT-C-AT-AC-G-G-T-GCT-C-AT-AC-G-G-T-GCT-AC-G-G-T-GCT-AC-G-G-T-GCAT-AC-G-G-T-GCAT-AC-G-G-T-GCAT-AC-G-G-T-GCAT-AC-G-G-TAC-CAT-AC-G-G-TAC-CAT-AAATCG-G-TG-ACG-ACG-AA-AAA-TCCACG-ACAT-T-ACAATCCACAT-T-ACAACG-ACACAT-T-ACG-G-ACACACAT-T-ACG-ACACACAT-T-ACG-ACACG-ACT-AAATCG-G-ACA		
ACTITINGGIOGOCCATANGGIACCACAGACGACGACGACGACGACGACATATACCAGAGAATTTAGAACAGTTAAGATCGATTATTAUTGATTT -T-C-AT-AC-ATATC-T-AC-G-G-T-GCT-C-AT-AC-G-G-T-GCT-C-AT-AC-G-G-T-GCT-C-AT-AC-G-G-T-GCT-AC-G-G-T-GCT-AC-G-G-T-GCAT-AC-G-G-T-GCAT-AC-G-G-T-GCAT-AC-G-G-T-GCAT-AC-G-G-TAC-CAT-AC-G-G-TAC-CAT-AAATCG-G-TG-ACG-ACG-AA-AAA-TCCACG-ACAT-T-ACAATCCACAT-T-ACAACG-ACACAT-T-ACG-G-ACACACAT-T-ACG-ACACACAT-T-ACG-ACACG-ACT-AAATCG-G-ACA		·
ACTITAGGIOGGCCATAAGGATGGCTAATGTAACTACAGGACG-GAACCTGGTGATATTACCAGGAATTTAGAACAGTTAAGATGGATTATTTUTGATTT -TC-A		
ACTITAGGIOGGCCATAAGGATGGCTAATGTAACTACAGGACG-GAACCTGGTGATATTACCAGGAATTTAGAACAGTTAAGATGGATTATTTUTGATTT -TC-A		
-TCA		
-TCA		
-TCA		
TT-C-AT-AT-ATCT-GC TT-C-AT-ATC-ATCATCATCATCATCAC		ACTITAGGTOGGCCATANGGRTGGCTAATGTAACTACAGGACGAGAACTGGTGATATACCAGGAGAATTTAGAACAGTAAGATCAATTATTATGATTT
-TCACATCCCCC		A
-TCÀ		-T
		-T
		-TCA
201 : ACRTGOCAGRAGAGAACAATATGGATCTAGTAAAGAAATTGATATGGCAATTACCACTITAAAAGTTTTTGCAGTAGCTGGAATTTTAAATATGACTGT		
201 : ACRTGGCAGAAGAGAACAATATGGGATCTAGTAAAGAAATTGATATGGCAATTACCACTITAAAAAGTTTTTGCAGTAGCTGGAATTTTAAATATGACTGT		
201 • ACRTGGCAGRAGAGAACAATATGGGATCTAGTAAAAGAAATTGATATGGCAATTACCACTTTAAAAAGTTTTTGCAGTAGCTGGAATTTTAAATATGACTGT		AC
201 ACATGOCAGRAGAGAACAATATGGATCTAGTAAAGAAATTGATATGGCAATTACCACTITAAAAGTTTTIGCAGTAGCTGGAATTTTAAATATGACTGT		_TT_G-ACGTTCCTAC-GGTACC
		·
	•	
	2	
	2	A
T-TACAAAA	2	A
	2	A
GTT	2	
	2	
	2	
A	2	
C	2	
	2	
	2	
	a	
	2	
	2	
	3	
	3	
	3	
	2	
	3	
	3	
	3	
	3	
	3	
	2	

FIG. 4A

	401:CT	TATCCTATIO								
L										
AMULA	-A			T	-AA					
)	-A				-AT				,	\T
t	-y				-AA				,	- AT-
DAI-1	-A			T	-XX	·				-W1
GSTON	-A				-AA		T-		j	-A
ORI-1						<u>T</u>				
ORI-2						T				
DAI-2						T			3,	
						T	T-		j	
AMARO					;	T	T-	G(G	
ZINOKA .	-A	CC	A	G	-A	GTT			A-	
ojoka		_				GTT				
OJOKA		AGGAGGTCC	ACTGTGGTTCA	CAGOCTTTTCT	IGCTAATTTAAC	GTT	GGCTACATTAAT	ATGICTGCGC		AGCAGATAAA
UOKA	TO	AGGAGGTCC	ACTGTGGTTCA	CAGOCTTTTCT	GCTAATTTAA	GTT	GGCTACATTAAT	ratgretgege	CTGGCTGTGC	AGCAGATAAA
UOKA	TO	AGGAGGTCC:	ACTGTGGTTCA	CAGCCTTTTCT	GCTAATTTAAC	GTT	GGCTACATTAAT	PATGICTGCGC	CTGGCTGTGC	AGCAGATAAA T
ijoka	TG	AGGAGGTCC:	ACTGRGGITCA	-TC	GCTAATTTAM	GTT	GGCTACATTAAT	ATGTCTGCGC 	-AGC	AGCAGATAAA TT
ijoka	TO	AGGAGGTCC: AT -AAT	ACTOROGITCA		rgctaatttaac	GTT	GGCTACATTAAT C	ratgictgcgc G-Ca- G-Ca-	CTGGCTGTGC 	AGCAGATAAA T T
rioka	TG:	AGGAGGTCC: AT -AAT AT	ACTGTGGTTCA	CAGCCTTTCT	GCTAATTTAM 	GTT	GGCTACATTAAT	ratgictgcgc g-ca- g-ca- g-ca-	CTGGCTGTGC	**************************************
ijoka	TCI	AGGAGGTCC: AT AT AT	ACTGTGGTTCA	CAGCCTTTCT	rgctartetam	GTT	CGCTACATTAAT	ratgretecce 	CTGGCTGTGC -A-G-C -C-G-C -A-G-C	**************************************
ijoka	TGI	AGGAGGTCC:ATATAT	ACIGIOGITCAATAT-	-TC	rgctaatttaac	GTT	GGCTACATTAATC	raterctecec 	-A-G-C	AGCAGATARA T T T T
ijoka	TG	AGGAGGTCC2	AT	CAGCCTTTCT	CCCTARITITANI		GGCTACATTAAT	1ATGRCTGCGC	XTGGCTGTGC -A-G-C -C-G-C -A-G-C	T
IJOKA	TG:	AGGAGGTCC2	ACTGTGGTTCA	-TC		-AC-TCAC-TCAC-TCAC-TCAC-TCAC-TCAC-TC	GGCTACATTAAT	**************************************	XTGGCTGTCC AGC CGC AGC	AGCAGATAAA T T T
UOSA	TCI	AGGAGGTCC:	ACTGTGGTTCA	-TC			GGCTACATTAAT	**************************************		**************************************
JOKA	TG	ACGAGGTCC:	ACTGTGGTTCA	-TC	A		CCTACATTANT	ratorctococ		**************************************

PH1 PC1	601 GAGATETTAGATGAAACAGTGAAACAGATGACAGCTGAGTATGATCGTACTCATCCTCCTGATGGGCCTAGACCGCTGCCCTATTTCACCCCTGCGGAGA
PETALUMA UNCB	AAGGCT-AGACAA
PPR	-AAGCT-AGAT
SEMBAI-1 BANGSTON	AAG
ACHORT-1 ACHORI-2	ACG
SENDAI-2 TM2	-GAAC
ANGUELINO SHIZUOKA	AACT-TA
PURUOKA	ATGT-TA

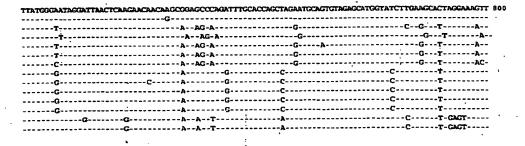




FIG. 4B

7H1	801; GGCAGCCATARANGCTARATCTCCCCGGGCAGTGCARTTGRAGCAAGGAGGTAAAGAGGATTATTCCTCATTTATAGATAG
C1	вол (должениями применениями) — А
RTALLIMA	T
K8	C
DR.	ACG
RNDAI-1	C
ANGSTON	C
OMORI-1	G
OMORI-2	G
RMDAT-2	GCC
M2	G
AMAHONO	G
COMMIN	CGTGANG-TGGCCGGCC
	CCTT(AA
AKOUKU AKOUKU	CARCHOCAGARCACGCTGAAGCAGCTGTATTTAAAACAATCTTTGAGCATAGCCAATGCTAAACCAGATTGTAAAAGGGCAATGAGTCATCTTAAAC 10

PH1	1001 CAGAGAGTACTTTAGAGGAAAAACTGAGAGCCTGTCAAGAGGTAGGATCACCAGGATATAAAATGCAGTTGTTAGCAGAAGCTCTTACAAGGGTTCAGAC
PC1 PETALUMA UMB PPR SENDAI_1 BANGSTON ACHORI-1 ACHORI-2	
SENDAI - 2 THA YOKOHAMA SHIZUOKA PURUOKA	
	AGTTCAAACAAGAGGATCTAGACCAACGTGTTTCAATTGTAAAAAACCAGGCCACCTGGCCAAACAATGTAGAGAAGCAAAGAGATGTAACAACTGTGGA 1200
	GTAGGTTAGT-AT-AT-AT-A
; i; ;	
	AC-AG-TGTT-GT-GT-G
CITIERS.	GAT-GATAT-G

	1201; AAAOCTGGTCACTTAGCTGCTAATTGCTGGCAAAGAGGTAAAAAACCCCGGGRAACGGGAAGATGGGGCCAGCTGCAGCCCCGGTAAACCAAGTGCAGC				
PH1 PC1	TG				
PETALUMA					
UK8 PPR					
SENDAI-1 BANGSTON	G				
AOMORI-1	•				
SENDAI-2					
AOROHYNY LM3	GC-TGATG-A-C-GTG-TT				
SH I ZUDKA PUKUOKA	GC-TGCATGA-CU10-11				
	AAATGGT***CCCATCTGCACCTCCAATGGAAGACAGGAAATTGTTAGATTTATAA 1353				
	-G-G-AACTGATTTA-A-				
	GCAAATAAGG-AACTGATTTA-A-				
	A***A				
	GCA***TGG-A-TTGAGATTTA-A-				

FIG. 4D

0	84#5	B4=5
0	A984	A9=4
385	FC1 GAG CGCAGCAGCTGAACACATGTATGCTCAGATGGGATTAGATACCAGACCATCTATAAAAGAAAG	FC1 GAG
		RT Reverse
0		RT Probe
0		RI Forward
385	TM2 gag CACAGCAGCTGAAAATATGTATGCTCAGATGGGATTAGACACCAGACCATCTGTAAAAGAAAG	TM2 gag
133	Aomori 1 CACAGCAGCTGAAAATATGTATGCTCAGATGGGATTAGACACCAGACCATCTATAAAAGAAAG	Aomori 1
133	TACTGCCGCTGAAAATATGTATGCTCAGATGGGATTAGATACTAGACCATCTTTAAAGGAGGCAGGAGGAAAGGTAG 133	Shizuoka
385	UK8 gag TGCTGCAGCTGAAAATATGTATACTCAGATGGGATTAGACACTAGACCATCTACAAAGGAAGCTGGAGGAAAAAGG 385	UK8 gag
385	JSY3 gag O IGCIGCAGCIGAAAATAIGTACACICAGAIGGGAITAGACACIAGACCAICIAIGAGAGAAGAGGAGGAAAAGGG 385	JSY3 gag O
385	TGCTGCAGCTGAAAACATGTATACTCAGATGGGATTAGACACCAGGCCATCTACAAGAGAAGAGGAGGAAAAGAGG	Bang
385	Pet gaag TGCTGCAGCTGAAATATGTATTCTCAAATGGGATTAGACACTAGGCCATCTATGAAAGAAGAAGCAGGTGGAAAAGGG 385	Pet gag
382	ConsengusC-GC-GCTGAA-A-ATGTACTCA-ATGGGATTAGA-AC-AG-CCATCTAGAGG-GGAAA-GG	Consensus

461 75 74	FC1 GAG AAGGA-CCTCCACAGGCTTATCCTATTCAACAGTAAATGGAGCACCACAGTATGTAGCCCTTGACCCAAAAATGGT 463 A9=4 -TAGC-CCTCCACAGGCATATCCTATTCAAACAGTAAATGGAGTACCATAACACGTAGCACTTGACCCAAAAATGGT 75 B4=5AGC-CCTCCACAGGCATATCCTATTCAAACAGTAAATGGAGTACCACAATATGTAGCGCTTGACCCAAAAATGGT 74
31 -TTGACCCAAAAATGGT 16	-attcaaacagcaaatggagcaccacaatatgttgac
ATGGT	TM2 gag AAGGA-CCTCCACAGGCTTATCCTATTCAAACAGTAAATGGAGCACCACAGTATGTAGCCCTTGATCCAAAAATGGT 461 ForwardAGC-CCTCCACAGGCATCTC19
E	Aomori 1 AAGGA-CCTCCACAGGCTTATCCTATTCAAACAGTAAGGAGCACCACAGTATGTAGCCCTTGATCCAAAATGGT 209
	Shizuoka A-GGAGCCTCCACAGGCATATCCTATCCAAACAATAAATGGAGCACCACAATATGTAGCCCTGGATCCTAAAATGGT_209
	UK8 gag AAGGC-CCTCCACAGGCATATCCTATTCAAACAGTAAATGGAGCACCACAATATGTAGCTCTTGACCCAAAAATGGT 461
4	JSY3 gag O AAAGC-CCICCACAGGCATCTCCTATTCAAACAGCAAATGGAGCACCACAATATGTAGCACTTGACCCAAAAATGGT 46
4	-CCTCCACAGGCATATCCTATTCAAACAGTAAATGGAGCACCACAATATGTAGCACTTGACCCAAAAATGGT 461
ል 4	Pet gag AAGGC-CCTCCACAGGCATATCCTATTCAAACAGTAAATGGAGTACCACATATGTAGCACTTGACCCAAAAATGGT 461

FIG. 10A

538 538 538 538 286 286	31 21 538 76 80	616 615 615 615 615 363 363 19	31 21 615 76
T-ATGGA-AA-GGAAGAAGAA-GG-TAGGAGG-GA-GA-CAT-TGGTT-AC-GC-TT-TC-GC-A ITATGGAAAAGGCAAGAAGGACTAGGAGGTGAGGAAGTTCAACTATGGTTTACTGCCTTCTGCAA ITATGGAAAAGGCAAGAAGGACTAGGAGGTGAGGAAGTTCAATTATGGTTTACTGCCTTCTCTGCAA ITATGGAAAAGGCAAGAAGGATTAGGAGGTGAGGAAGTTCAACTATGGTTTACTGCCTTCTCTGCAA TAATGGAAAAGGCAAGAAGGATTAGGAGGTGAAGAAGTTCAACTATGGTTTACTGCCTTCTCTGCAA TTATGGAAAAAGCCAAGAAGGATTAGGAGGTGAAGAGGTCCAACTATGGTTTACTGCTTTTCAGCTA TTATGGAAAAAGCCAAGAGAGGGGTAAGAGGTGAGGT	TTATGGAAAAAGCAAGAGGGGGTAGGAGGTGAGGAGGTCCAACTGTGGTTCACAGCCTTTTCTGCTA	ACCTACTGA-ATGGC-ACATTAAT-ATG-C-GC-CC-GG-TG-GC-GCAG-TAA-GA-ATT-GA-GAA ACCTACTGACATGGCCACCACCACCACCACGGGTGCGCTGCAGATAAAGAAATATTGGATGAA ACCTACTGACATGGCCACATTAATAATGGCCGCACCAGGGTGCGCTGCAGATAAAGAAATATTGGANGAA ACCTACTGACATGGCCACATTAATAATGGCCGCACCAGGGTGCGCTGCAGATAAAGAAATATTGGATGAA ACCTACTGACATGGCCACATTAATAATGGCCGCACCAGGTGCGCCTGCAGATAAAGAAATATTGGATGAA ATCAACTGATATGGCTACATTAATATGTCTGCACCTGGCTGTGCAGCAGATAAAGAAATTCTAGATGAA ATCAACTGATATGGCTACATTAATTATGTCCGCACCTGGCTGTGCAGCAGTTAAAGAAATTCTAGATGAA ATCAACTGATATGGCTACATTAATTATGTCCGCACCTGGCTGTGCAGCAGATAAAGAAATTCTAGATGAA	RT Probe
Consensure Pet ge Bar JSY3 gag UK8 ge Shizuoka Aomori TM2 g TM2 g	RT FORWARD RT REVERENCE FC1 (Consen Pet B JSY3 ga UK8 Shizuo Aomor	RT Forv RT P1 RT Reve

FIG. 10B

Уват

B4=5 -----